Effectiveness of PRK(Photorefractive Keratectomy) in Correction of Astigmatism in Patients Reffered to Ardabil Noor Surgical day clinic

Abstract

Background and Objective:Astigmatism is a commonly encountered refractive error, which account for about 13% of refractive errors of the human eye. One of the most common methods of refractive surgery worldwide is PRK surgery. The purpose of this study was to determine the effectiveness of PRK in correction and comparison of three types of astigmatism.(Mild, Moderate and Severe)

Methods: This study was performed on 46 eyes of 25 patients with astigmatism ranging form 1-6 diopter with ≤1D sphere. After obtaining informed written consent, demographic information of patients,the results of the examination were recorded in the questionairs. The patients undergoing surgery were followed up 12 months and subsequently, their data were collected and analyzed statistically.

Results: The mean preoperative and postoperative refractive astigmatism was -3.01±1.42 Diopters and -0.40±0.37(D) ,respectively ($p<0.001$). The mean preoperative and postoperative sphere was -0.12±0.51 (D) and -0.00±0.16 (D),respectively ($p=0.11$). The mean preoperative refractive astigmatism in the severe, moderate and mild groups was -5.00±0.57(D), -3.27±0.49(D) and -1.79±0.42(D), respectively and the mean postoperative refractive astigmatism was -0.70±0.45(D), -0.37±0.37(D) and -0.26±0.21(D), respectively. The effect of PRK on astigmatism correction in severe astigmatism was better than mild and moderate astigmatism ($p<0.001$). There is no significant relationship between age and correction of refractive astigmatism by PRK ($p=0.75$). Refractive and keratometric astigmatism stability in refractive astigmatism was achieved at 3 and 1 month postoperatively respectively. The mean SIA and IOS were 3.11±1.52 and 0.14±0.08,respectively.

Conclusion: PRK is a successful surgical to correct and reduce all types of astigmatism and it ’s effect on severe astigmatism was significantly higher than mild and moderate astigmatism.

Keywords: Astigmatism, PRK, Refractive error